

Research of Etiology Cancers in Jammu and Kashmir Valley

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ABSTRACT

Our aim is towards conduct a widespread review of the literature on the prevalence and etiology of the various malignancies into the Jammu and Kashmir to identify potential future research areas. Worldwide, melanoma is one of the leading foundations of illness and death. The Kashmir Valley, with its diverse socio-religious traditions, eating habits and locations, appears to have a higher incidence of cancer than other parts of India. All forms of cancer have be present conveyed in the Jammu and Kashmir basin, which including skin, dome and turtleneck, abdominal swathe, genitourinary system, lung, breast, skin, thyroid and blood. Cancer etiology is the result of complex interactions between genetic and environmental variables.

Keywords: kashmir, environment, cancer

I. INTRODUCTION

The northernmost state in India is Jammu and Kashmir (J&K). At J&K, the prevalence of cancer has increased steadily over the past decade. It is important to note that the most common cancers in men are lung cancer (like lung cancer, prostate cancer, colon cancer, and gastrointestinal cancer).

The succeeding leading cause of death wide-reaching, after heart disease, is cancer. An estimated 9.6 million people died as a result of it in 2018. Cancer is a disease in which a mass of cells grows out of control, resulting in a tumour that spreads throughout the body. Cancerous cells are able to circumvent the cell cycle's checkpoints. Proto-oncogene or tumour suppressor gene alterations cause malignant cells to proliferate and divide uncontrollably, resulting in the formation of cancer. The Tobacco uses, obesity, viral infections and radiations, stress, a lack of somatic movement, pollution from the environment, and hereditary factors are all significant contributors to cancer risk.

In the Kashmir Valley, we will learn about the most common cancer kinds and risk factors that affect a specific subset of the population. This knowledge will be gained through an epidemiological study. Country-to-country differences exist in the prevalence and pattern of various forms of cancer.. There is a higher incidence of cancer in industrialised countries because of the differences in dietary practises, way of life, and living conditions that exist in these countries. Geographically, climatically, dietaryly, and spiritually, the Kashmir Valley is distinct from the rest of India. SKIMS Soura and SMHS Hospital Srinagar both maintain hospital-based cancer registries (HBCRs) from which all studies on Kashmir's cancer profile have been culled.

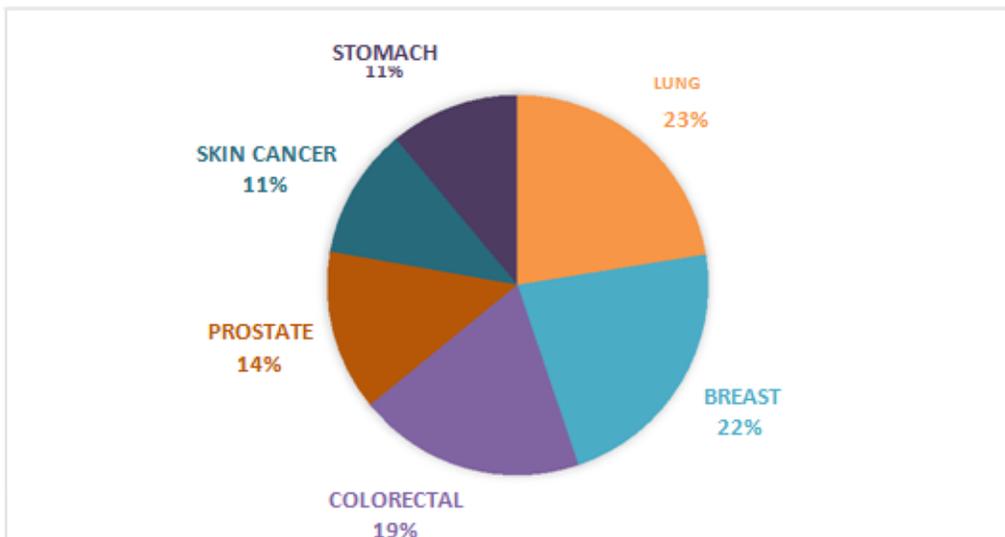


Figure 1: Pie chart represents the Leading cancer cases globally

II. CANCER SCENARIO IN KASHMIR

Esophageal cancer is the furthestmost numerous malevolence in men and/or women, according to Dhar et al. Local consumption of salty hot tea was found to have a substantial link with the occurrence of esophageal cancer in the area.

The Cancer is the more common among men in Jammu and Kashmir than women and most patients are between the ages of 65 and 69, according to a study by Wani et al. oesophageal, stomach, and lung cancer were also common among men and women in Kashmir, the study revealed.

As many as 19.2% of persons are diagnosed with stomach cancer, followed by 18.5% with esophageal cancer and 16.6% with lung cancer, according to a study conducted by A. A. Pandith et al The most prevalent malignancies in men are those of the stomach and lungs, whereas the most conjoint cancers in the women are those from the oesophagus and breast. There are many types of cancer in this region, compared to most of India, where oropharyngeal is the most prevalent type.

It was shown that both men and women were equally impacted by esophageal cancer, with men suffering from the disease at higher rates than women in the study by Rasool et al. Men and women are more likely to develop cancer of the oesophagus than the lungs, brain, head and neck, breasts, or rectum, according to a study by Ayub et al. titled "Epidemiological Distribution and Incidence of Different Cancers in Kashmir Valley 2002-2006."

Gastric cancer is the supreme common enmity in Kashmir, according to a new study by Qureshi et al. Tobacco smoking and drinking salted tea are the most common risk factors with for stomach cancer in the Jewish population.

III. CAUSES OF VARIOUS CANCERS IN

Kashmir Valley

Inhabitants of the Valley have changed their lifestyles and eating habits, which has led to an increase in cancers, particularly esophageal, colon and breast cancers. Here are a few of the most important factors that contribute to cancer in Kashmir Valley. Physical environment (such as climate, soil, and water) and social/cultural variables are both implicated in cancer development (individual behavior, lifestyle, food habits, alcohol, tobacco consumption, hygiene and occupation). Approximately 80% of all human malignancies are caused by environmental factors, and 10% to 20% of these cancers may be linked to food. Several significant behavioral and dietary risks, such as high BMI, lack of physical activity, fruit and vegetable low intake, cigarette use, and lack of frequent check-ups have contributed to an increase in the cancer death rate among Kashmiri residents.

IV. LIFESTYLE RELATED FACTORS

4.1 Unusual Eating Habits

It's possible that the high rate of stomach cancer among Kashmiris is due to salt consumption and Helicobacter pylori infection. It is believed that the high intakes of hot, salty alkaline tea (Noon Chai), traditionally made in a specifically designed copper pot known as the "Samwar," contribute to the higher risk for stomach cancer in Kashmiris. Other dietary risk factors for stomach cancer include high-temperature food consumption, high rice intake, pickled food, spicy food, and excessive chilli consumption, which have been investigated in other parts of India as well as Kashmir. Obesity and colon cancer are linked because of a normal transition in the consumption of traditional diet, which was rich in complex carbohydrate, to more simple carbohydrates.

Inadequate nutrition is a most important contributing element in the development of many diseases, which is also including cancer. The impact of nutrition on various types of cancer varies substantially. Heavy red meat consumption is a leading cause of various cancers, including those of the gastrointestinal tract, colon and prostate, as well as those of the urinary and mammary systems, the breast and the stomach and the oral cavity. Heterocyclic amines are most likely to blame, which are formed during the cooking of red meat. Heterocyclic amines are the most dangerous carcinogens on the market. Charcoal and smoke curing of beef produce pyrrolysates, which are carcinogenic to human cells. Using plastic containers to store food increases the risk of breast and prostate cancer because bios-phenol from the containers dissolves and migrates into the food. Vitamin C deficiency is linked to an increased incidence of stomach, oral, pharyngeal, esophageal, lung, pancreas, and cervical cancers among Indian populations because of a lack of fresh fruits and high cooking temperatures.

4.2 Alcohol and Smoking

Kashmiris are also heavy smokers, and they smoke in a variety of ways. Although smoking hookah (a particular cigar using raw tobacco) is regularly practiced by both men and women in rural Kashmir, it increases the risk of lung cancer even though women do not normally smoke. Passive smoking among family members is mainly caused by cigarette and hookah smokers, especially in winter, when smog, smoke and fumes from cooking and from different heating appliances pollute the air in crowded and poorly ventilated. One of the leading causes of cancer is the use of tobacco products such as cigarettes or

hookahs, as well as snuff and chewing. Cigarette smoking has been interconnected to a comprehensive range of malignancies in the mouth and throat, as well as the lungs. Lung cancer is the most common reason of bereavement from smoking.

Alcohol has been recognized as a Group 1 anticancer drugs by the World Health Organization. Alcohol consumption has also been linked to an increased possibility of colorectal disease, but this is only true for a small minority of people in the Kashmir Valley. Cirrhosis of the liver and hepatocellular cancer can occur as a result of long-term alcohol damage.

4.3 Cancer in Kangri

As a result of the persistent skin irritation caused by the use of a fire pot (Kangri) by the Kashmiri people during the winter season, there is a high prevalence of this carcinoma, which results in a premalignant lesion known as erythema ab-ignae. Skin cancer known as "Kangri" cancer was a common ailment in Kashmir's valley. This kind of skin cancer accounted for nearly half of all cases. Unlike other cancers, Kangri cancer is particularly aggressive and has a tendency to spread to the nodes. In the rest of the world, this malignancy is practically nonexistent.

V. ENVIRONMENTAL FACTORS

5.1 The Emission

Acquaintance to ultraviolet radiation is the leading risk factor for the innumerable types of malignant skin tumors, comprising squamous cell carcinoma, basal cell carcinoma and also the melanoma. It should be estimated that about 10% of cancer cases are caused by radiations, both ionising and non-ionizing. Generally speaking, exposure to high-energy radiation, such as UV radiation (found in sunshine), x-rays, and gamma radiation, can cause cancer. The sun, sunlamps, and tanning booths all emit ultraviolet (UV) radiation, which is harmful to the skin. Skin cancer can be caused by premature ageing of the skin. Radioactive substances and pulsed electromagnetic fields are other major sources of radiation. Thyroid, skin, leukaemia, lymphoma, breast, and lung carcinomas are among the most common types of cancer that can be caused by exposure to high enough amounts of carcinogenic radiation. Increases the risk of breast cancer in girls who have been exposed to chest X-rays for diagnostic and therapeutic purposes during puberty

5.2 Environmental Pollution

Nitrates in drinking water form mutagenic N-nitroso compounds, which increase malignant tumors such as lymphoma, leukemia, colorectal and bladder in humans. Chemicals such as chloroform and polychlorinated biphenyl (PCB), as well as pesticides and sulfur dioxide (SO₂), have been detected in the water. These compounds have been found to cause many human diseases, including cancer. People who have been drinking chlorinated water for a long time have been found to have augmented the hazard of cancer. Biological, organic and atmospheric particles damage our environment by polluting the air and water we breathe. Respiratory illness, heart disease, and lung cancer are common causes of exposure to polluted air. Particulate matter, depleted ozone, ammonia, nitrogen dioxide, carbon dioxide, sulfur dioxide, carbon monoxide, electrochemical decay of radon gas, methane, chlorofluorocarbons and hydrofluorocarbons, are the main sources of air pollution. Nearly 3.5 million persons worldwide die each year from indoor and outdoor pollution.

VI. INFECTIONS

Infectious bacteria have been associated in the development of all types of cancer. Many infectious agents have been implicated as one of the main causes of cancer in current experimental and epidemiological studies. Eight different viruses have been linked to a variety of cancers, with varying degrees of certainty, but they are the most common culprits. Parasites and a single bacterium are also implicated in carcinogenesis. Bacteria (*Helicobacter pylori*), viruses (hepatitis B and C virus, Epstein-Barr virus, human papillomavirus, Epstein-Barr virus, human immunodeficiency virus, human T-cell lymphotropic virus, human herpes B) and parasites (*Sistosoma haematobium*, *Clonorchis sinensis*). Hepatitis B virus (HBV) is thought to be the underlying cause of 60% of all primary malignant liver tumors worldwide and 67% of cases in poor countries. Most cases of parenterally transmitted hepatitis are caused by hepatitis C (HCV). HCV is responsible for almost a quarter of all cases of liver cancer worldwide.

Gastric cancer is associated with chronic *H. pylori* infection. *Schistosoma haematobium* and liver flukes, *Clonorchis sinensis* and *Opisthorchis viverrini* are closely associated with malignancy (Cholangiocarcinoma). Infection by human papillomaviruses (HPV) is known to occur in the vaginal tract. Neopharyngeal cancer and sinonasal angio-centric nasopharyngeal lymphoma are caused by Epstein-Barr virus. Only in persons with a congenital or acquired immunodeficiency is EBV linked to non-Hodgkin lymphoma. Because of its immunosuppressive properties, the Human immunodeficiency virus (HIV) is likely to increase one's chance of developing cancer. In adults with T-cell leukemia/lymphoma, human T-cell lymphotropic virus (HTLV-) is the most common etiological agent. Almost solely in HTLV-1-endemic regions does this disease manifest itself. Kaposi sarcomas appear to be caused by human herpes virus 8 (HHV-8) infections. Gastritis and ulcers can be caused by *Helicobacter pylori* infection, which can be lifelong if antibiotics are not used to cure it.

Table 1: Types of cancer by contagious agents

Transmittable agent	Cancer site
1. Viruses	
HPV	cervix
HCV	Liver
EBV	Lymphomas and nasopharyngeal carcinoma
HHV-8	Kaposi sarcoma
HTLV-1	Leukaemia
2. Bacterium	
<i>H. pylori</i>	Stomach
3. Parasites	
<i>Schistosoma haematobium</i>	Bladder or intestines
Liver flukes, <i>Opisthorchis viverrini</i>	Cholangiocarcinoma

VII. CARCINOGENS IN THE WORKPLACE

Dust, pesticides, and fertilizers found in agriculture may performance a role for the enlargement of pancreatic cancer. Pesticides/insecticides, Pesticides, Chemicals, Fertilizers, and Manure were identified in the daily activities of farmers and housewives according to the survey. Pesticides and fertilisers have been studied primarily in relation to stomach cancer risk among these exposures. However, a majority of research linking an elevated risk of cancer to certain working environments were published between 1950 and 1975. Working conditions in developing countries are becoming more carcinogenic as a result of the fast industrialization taking place around the world, which is causing dangerous industries to be transferred and new local industries to be established.

VIII. CONCLUSION

According to the latest statistics, cancer is becoming more common in the Kashmir Valley. In order to better understand the variables contributing to the development of cancer in this region, more research on the origins and causes of various cancers is needed. With this information, we can better prioritize resource allocation for cancer prevention and treatment. Due to the lack of population-based cancer registries, no substantial population-based epidemiological study has been conducted on the aetiology of various cancers in Kashmir Valley. This leaves numerous unanswered questions that can only be answered by population-based studies. Several significant behavioural and dietary factors, such as obesity, low fruit and vegetable intake, inactivity, tobacco use, and lack of routine check-ups, have contributed to an increase in the cancer death rate among Kashmiri residents. Lung, gastrointestinal, and blood cancers are on the rise due to a shift in people's eating and lifestyle patterns. The growth in cancer cases is also related to the increased consumption of spicy and pickled foods, as well as the wide availability of tainted food products. Every day foods are rife with adulteration, and this must be addressed and regulated. Lung cancer rates may grow even further in the near future as more children and young adults begin to smoke.

REFERENCES

1. Lazarevic K, Nagorni A, Rancic N, Milutinovic S, Stosic L, & Ilijev I. (2010). Dietary factors and gastric cancer risk: hospital-based case control study. *J. BUON.*, 15(1), 89–93.
2. Rojas-Campos N, Sigarán MF, Bravo AV, & Jimenez-Wani et al. (1990). Salt enhances the mutagenicity of nitrosated black beans. *Nutr. Cancer*, 14(1), 1–3.
3. Siddiqi M, Tricker AR, & Preussmann R. (1988). The occurrence of preformed N nitroso compounds in food samples from a high risk area of esophageal cancer in Kashmir, India. *Cancer Lett.*, 39(1), 37–43.
4. Rasool MT, Lone MM, Wani ML, Afroz F, Zaffar S, & Mohib-ul Haq M. (2012). Cancer in Kashmir, India: Burden and pattern of disease. *J. Can. Res. Ther.*, 8(2), 243–6.
5. Pourfarzi F, Whelan A, Kaldor J, & Malekzadeh R. (2009). The role of diet and other environmental factors in the causation of gastric cancer in Iran—a population based study. *Int. J. Cancer*, 125(8), 1953–1960.
6. Nemati A, Mahdavi R, & Baghi A. (2012). Case-control study of dietary pattern and other risk factors for gastric cancer. *Health Promotion Perspectives*, 2(1), 20–27.
7. Larsson S, Bergkvist L, & Wolk A. (2006). Processed meat consumption, dietary nitrosamines and stomach cancer risk in a cohort of Swedish women. *International Journal of Cancer*, 119(4), 915-919.